US006896003B1

(12) **United States Patent**
Gieseke

(10) **Patent No.: US 6,896,003 B1**
(45) **Date of Patent: May 24, 2005**

(54) **HIGH EFFICIENCY LOW ACTUATION FORCE INLET DOOR**

(75) Inventor: **Thomas J. Gieseke**, Newport, RI (US)

(73) Assignee: **The United States of America as represented by the Secretary of the Navy**, Washington, DC (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 254 days.

(21) Appl. No.: **10/292,954**

(22) Filed: **Nov. 12, 2002**

(51) **Int. Cl.**[7] **A01G 25/09**
(52) **U.S. Cl.** **137/899.4**; 137/833; 251/62; 251/299; 114/239
(58) **Field of Search** 137/899.4, 833; 114/238, 239; 251/298, 299, 62, 359

(56) **References Cited**

U.S. PATENT DOCUMENTS

868,946	A *	10/1907	Smulders	114/238
925,707	A *	6/1909	Lake	114/239
3,011,307	A *	12/1961	Edelfelt	137/15.1
4,307,743	A *	12/1981	Dunn	137/15.1
4,372,505	A *	2/1983	Syberg	244/53 B
4,620,679	A *	11/1986	Karanian	244/53 B
5,088,660	A *	2/1992	Karanian	244/53 B
6,264,137	B1 *	7/2001	Sheoran	244/53 B

* cited by examiner

Primary Examiner—A. Michael Chambers
(74) *Attorney, Agent, or Firm*—James M. Kasischke; Michael F. Oglo; Jean-Paul A. Nasser

(57) **ABSTRACT**

An inlet system for an inlet in a flow field includes an inlet recess housing having an interior with forward and rear end walls, a base wall, and an opening formed in an upper surface thereof. An intake duct is formed in a rear end wall of the inlet recess. An inlet door has a first end pivotally connected to a forward wall and a trailing edge directed to the rear end wall of the inlet housing such that the inlet door selectively closes the opening of the inlet housing. An overlap member can extend from the rear end wall of the inlet recess to a predetermined distance adjacent a trailing edge of the door. A deflector is provided having an end deflecting portion in contact with the trailing edge of the door over at least a portion of the inlet door's pivoting path. Side deflecting portions project from the end deflecting portion toward the front wall of the inlet housing. The deflector controls pressure recovery of flow field at a fully open position of the door until the trailing edge of the door clears the end deflecting portion of the deflector.

7 Claims, 2 Drawing Sheets